

METHOD AND APPARATUS FOR PRODUCING LOW MELTING POINT METAL PRODUCT

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Abstract

PURPOSE:To provide a method for producing a low m.p. metal product, by which e.g. net-shaped formed product having excellent mechanical property can be produced in only one process without needing the extra labor and energy.

CONSTITUTION:After removing the impurity by melting the low m.p. metal raw material in the vacuum or in inactive atmosphere, the molten raw material is supplied into a screw cylinder devices 2, 4 and also, the additive is supplied. The screw 2 is driven in the condition of holding to the solidus temp. or higher and the liquid-us temp. or lower of the low m.p. metal raw material and the raw material is partially solidified. Dendritic crystal developed at the time of solidifying is broken and finely spheroidized by shearing action to produce a thixotropical alloy or additive mixing alloy. This alloy is introduced into plunger cylinder devices 5, 6 arranged in series as the concentrical condition with the screw cylinder devices 2, 4 and successively, injected into a cavity 64 with the plunger 6. After completing the injection solidification and lowering to the forging temp., the pressure of plural number of rams 71, 72, 73 is suitably changed and the alloy is forged on the dies 61, 62 to obtain the alloy product or a metal base composite product.

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